## ABSTRACT OF THE DISCLOSURE

A method and apparatus for frame-aware and pipelined hierarchical scheduling is described. In accordance with at least one embodiment of the invention, some or all schedulers of a communication node are associated with one or more storage devices that maintain values used by corresponding higher level schedulers to make scheduling decisions. Because of the nature of the scheduling decision flow and the potential to update registers in real-time, the scheduling arrangement can respond almost immediately to changes occurring at the input queues, which allows scheduling to be responsive to differing priorities of incoming cells. The nature of the scheduling decision flow also allows pipelined scheduling, in which scheduling of one or more additional cells can begin before scheduling of a first cell is completed.